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| 25937 | 7590 | 10/05/2005 | EXAMINER | |
| ZARETSKY & ASSOCIATES PC | | | LI, SHI K | |
| 8753 W. RUNION DR. | | | ART UNIT | |
| PEORIA, AZ 85382-6412 | | | PAPER NUMBER | |
| | | | 2633 | |

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,581

Applicant(s)

LICHTMAN ET AL.

Examiner

Shi K. Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 23-44 is/are pending in the application.
4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 21 and 23-44 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 21 and 23-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over admission (admitted prior art) in view of Müller (U.S. Patent 6,701,085 B1).

Regarding claims 21, 31 and 41, FIG. 2 (prior art) of the instant application discloses an apparatus for MAC based transmission in a WDM optical network. FIG. 2 (prior art) comprises OADM 32 with a first drop module 34 for dropping a first channel from a first fiber ring and a first add module 36 for adding a second channel to the first fiber ring, a second OADM 38 with a second drop module 40 for dropping a third channel from a second fiber ring and a second add module 42 for adding a fourth channel to the second fiber ring, a first MAC module with a first transmitter for providing said second channel and a receiver for receiving the first channel, a second MAC module with a transmitter for providing said fourth channel and a receiver for receiving said third channel. The difference between admission (FIG. 2) and the claimed invention is that the admission MAC modules add/drop to/from the same fiber ring. Müller teaches in FIG. 1 a ring architecture and teaches in FIG. 3 the details of a node structure. Müller teaches in FIG. 3 $WDUX_0$ and $WMUX_0$ for demultiplexing and multiplexing west bound traffic. Together, $WDUX_0$ and $WMUX_0$ form an $OADM_0$. Similarly, Müller teaches in FIG. 3 $WDUX_w$ and $WMUX_w$ for demultiplexing and multiplexing east bound traffic. Together, $WDUX_w$ and $WMUX_w$ form an $OADM_w$. Müller also teaches to connect working line/trunk module W_0 to $OADM_0$ and working line/trunk module W_w to $OADM_w$. One of ordinary skill in the art would

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have been motivated to combine the teaching of Müller with admission because traffic are usually bi-directional and it is desirable for two nodes to communicate via the short path along the ring. For example, it is desirable to send traffic from node A to node D in clock-wise direction and to send traffic from node D to node A in counter-clock-wise direction. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange multiplexer and demultiplexer on the east side as an OADM, multiplexer and demultiplexer on the west side as another OADM, and arrange traffic so that bi-directional traffic between two nodes are routed via the short path along the ring, as taught by Müller, in FIG. 2 (prior art) of instant application.

Regarding claims 23-25 and 32-34, it is well known in the art that channel of same wavelength or different wavelengths can be used for bi-directional traffic between two nodes. For example, in FIG. 1 of Müller, the channel use for traffic from node A to node D is independent of the channel for traffic from node D to node A. Also, the channel use for traffic from A to node D is independent of the channel for traffic from node A to node B.

Regarding claims 26-29 and 35-38, admission (FIG. 2) teaches Ethernet switch 66 connected to MAC modules 60 and 49.

Regarding claims 30 and 39, admission (FIG. 2) and Müller include node B with arrangement similar to node A.

Regarding claims 42-44, admission (FIG. 2) and Müller include node B with arrangement similar to node A. When the add module of OADM 32 and the drop module of the OADM in node B are tuned to the same wavelength, signal transmitted by transmitter 62 is receiver by MAC module in node B. Similarly, receiver 64 of node A receives signal transmitted by MAC

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module of node B. Note that in the modified network of admission and Müller, traffic from node A to node B is carried by fiber 46 and traffic from node B to node A is carried by fiber 48 because they are the shortest routes between node A and node B.

Response to Arguments

3. Applicant's arguments filed 19 July 2005 have been fully considered but they are not persuasive.

The Applicant argues that Müller does not teach the use of OADMs. The Examiner disagrees. The Examiner includes Kartalopoulos ("Introduction to DWDM Technology: Data in a Rainbow" by S. Kartalopoulos, IEEE Press, 2000, pp. 147-149) as reference. Kartalopoulos teaches in Chapter 11 Optical Add-Drop Multiplexers (OADMs). Kartalopoulos discloses in FIG. 11.4 a structure similar to Müller. Therefore, Müller teaches the use of OADMs.

The Applicant argues that Müller does not teach the use of a single optical fiber for dropping and adding wavelengths. However, admitted prior art FIG. 2 teaches such features. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

4. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.

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1992). In this case, one of ordinary skill in the art would have been motivated to combine the teaching of Müller with admission because traffic are usually bi-directional and it is desirable for two nodes to communicate via the short path along the ring. For example, with reference to FIG. 1 of Müller, it is desirable to send traffic from node A to node D in clock-wise direction and to send traffic from node D to node A in counter-clock-wise direction. The Examiner includes another reference to demonstrate that the motivation for combination is common knowledge of one of ordinary skill in the art. Hunter et al. (D. Hunter et al., "Optimal Mesh Routing in Four-Fiber WDM Rings", Electronics Letters, Vol. 34, No. 8, 16th April 1998) teaches to use two counterpropagating unidirectional work fiber to connect pairs of nodes in a ring network. Hunter et al. teaches to always use path of length less than or equal to $N/2$, where N is the number of nodes in the ring. Such approach minimizes the numbers of wavelengths required.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

skl
27 September 2005


JASON CHAN
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